BIRDS. THEIR DEVELOPMENT IN NEST BUILDING.

There is little reference to the above subject in any ornithological works to which I have access. Still there appears to be much evidence that even at the present time, many birds are in what might be termed a transitory condition, in regard to nest building, and that nest types are still changing.

In the Zoologist of 1902, page 28; 1903, page 193; 1904, page 265; my notes on the subject appeared, the Ringed necked Plover being taken as an example.

The nidification of this plover is one of the most interesting adopted by British Birds; interesting not only in itself, but in the light it throws upon the evolution or rather development in nest building of birds in general.

I beg to affix some of my photographs taken direct from Nature to illustrate some of these different types.

The Ringed Plover. (Aegialitis Hiaticola)

This bird in Hampshire and the neighbouring county of Sussex, appears to me to build three distinct types, or classes of nest, to which perhaps might be added a fourth, but I have only found two examples of the latter; the normal or rather the usual nest (which comes under Class 1) consists of an unlined cavity, on the sea shore, open above,

and placed in an exposed position; the eggs four in number; with their pointed ends turned inwards, and a little downwards.

I shall now endeavour to describe the 4 classes in detail.

RINGED PLOVER. CLASS 1.

What may be called primitive nests, viz. the eggs laid in a depression (which varies in depth according to the situation) without any attempt to line the nest cavity.

Found on smooth gravel sea banks, on the rough shingle of sea shore, and on sand; in the first two situations the nest cavity is very shallow, simply formed by the shape of the stones; in the latter it is usually much deeper and shows evidence that it has been scooped out by the birds themselves.

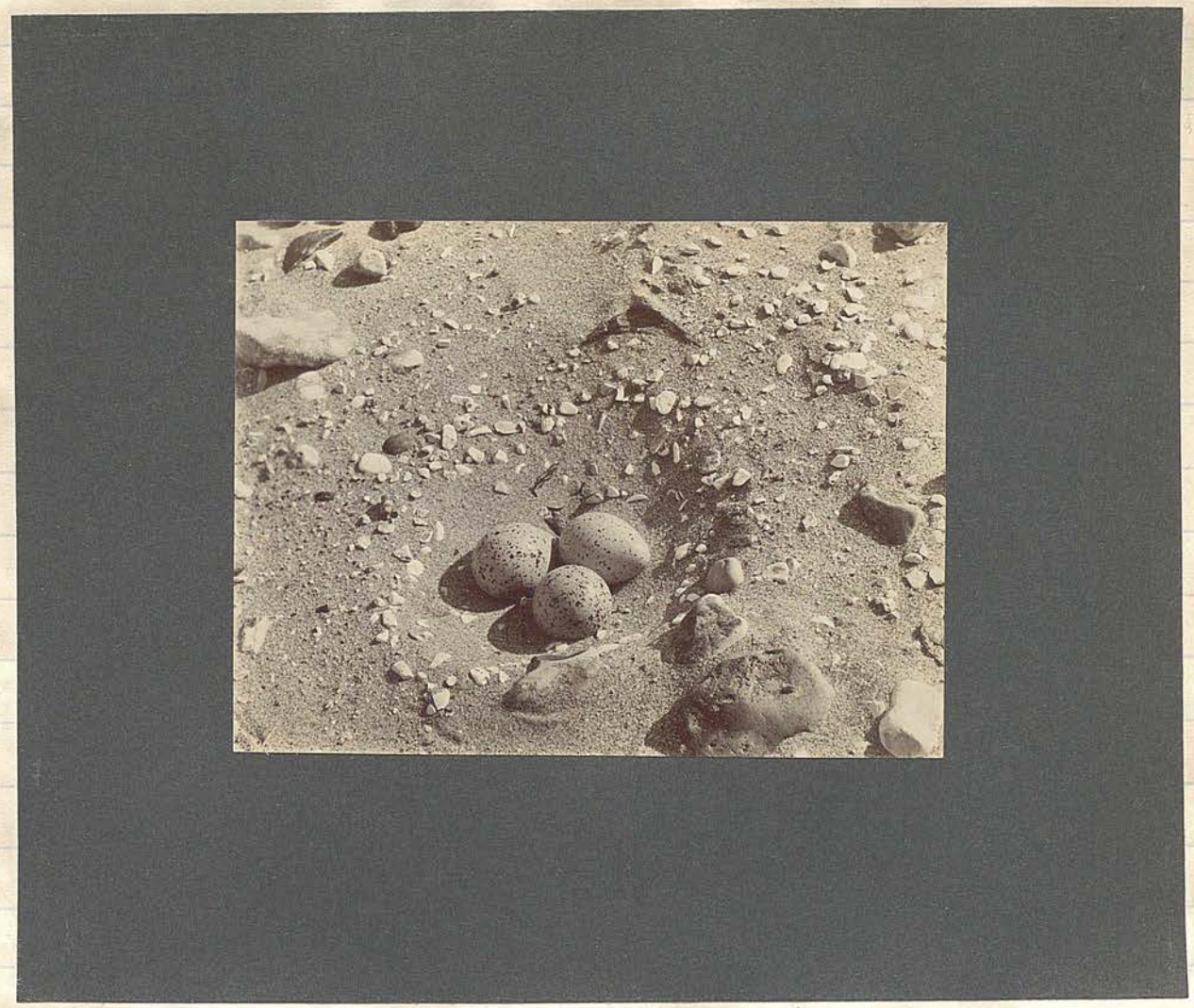
RINGED PLOVER. CLASS 1.

May 6th 1900. Hants. Nest on a smooth gravel sea bank; the four eggs in their normal position.

RINGED PLOVER. CLASS 1.

April 20th 1901. Hants. Nest on rough shingle, the eggs four, but not in normal position, for the tapering ends of two are turned sideways a third outwards; the fourth only in the normal position.

RINGED PLOVER. CLASS 1.



May 6th 1905. Sussex. This nest was on a sandbank; the cavity a somewhat shallow scratch out, but deeper than in the two already described owing to the fact that the nesting site was on sand; the eggs, three in number, do not occupy a normal position, although incubation was proceeding. When a Ringed Plover's nest contains only two or three eggs, in my experience,

they are never all placed normally with their pointed ends inwards and downwards.

In a nest containing the usual clutch of four eggs one, two or even three may be in an unusual position, it has been urged that when this occurs, the eggs originally were in a normal position, but were disturbed by the frightened hen-bird quickly leaving her nest on the approach of an intruder, and that she replaces them again before settling down on the nest. Certainly this is not always the case, for on several occasions I have found a nest containing four eggs one or more not in a normal position, and retiring some distance, have with glasses watched the hen-bird return to the nest, and after allowing her to sit for a considerable time, gone up to find the eggs still in exactly the same position they occupied when first found, and on repeating the manoeuvre once or twice afterwards, the eggs still occupied the original position.

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RINGED PLOVER. CLASS 1.

June 10th 1904. This nest taken at some distance, had the nest cavity scratched in the sand of a stony beach. The four eggs were in a normal position.

The above form of nidification I presume, differs only in degree from that adopted by the Reptilian Ancestors of the class aves, and it is by far the commonest mode adopted by the Ringed Plover.

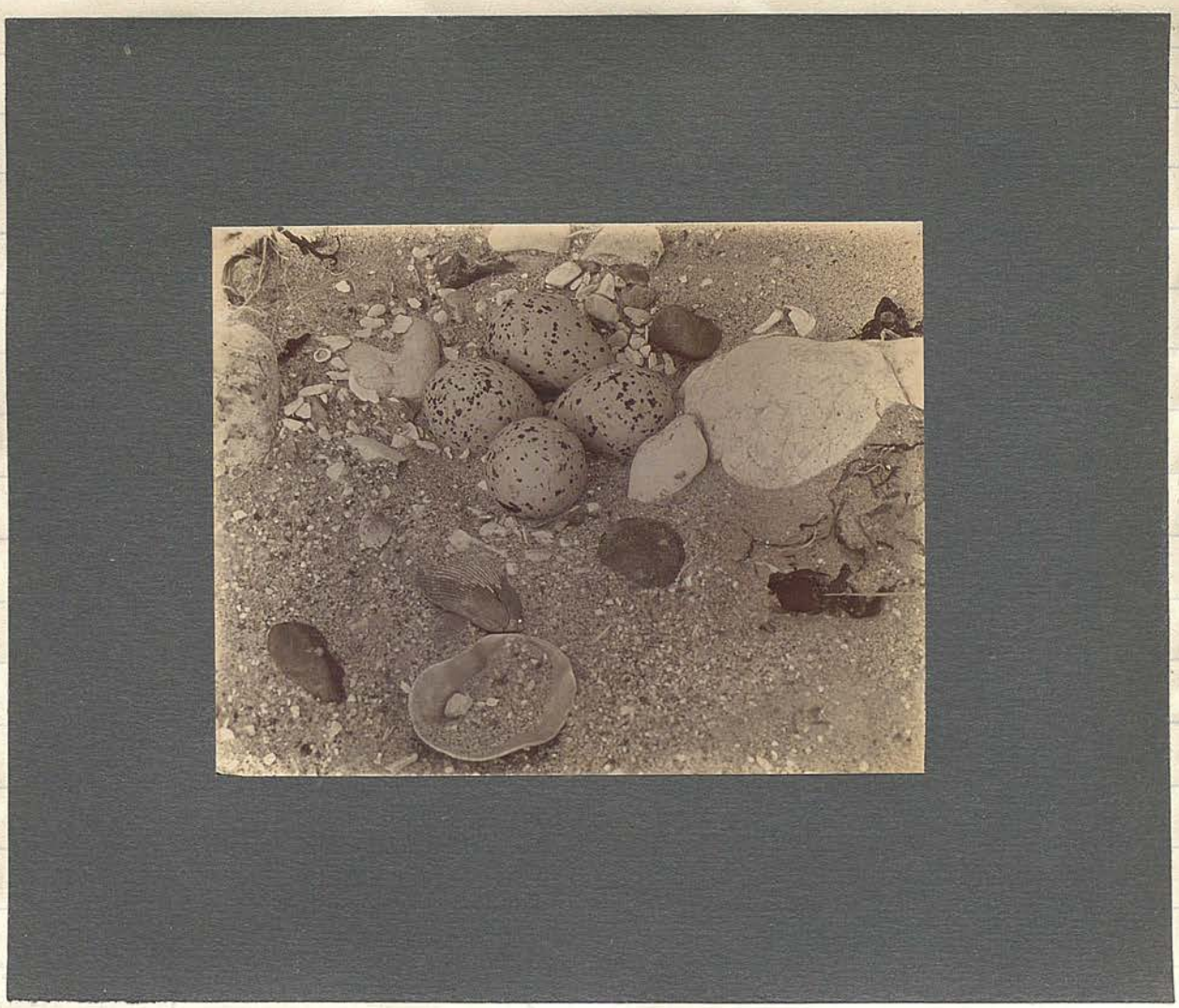
RINGED PLOVER. CLASS 11.

This is a slight advance in nest construction on Class 1 and occurs on the sea shore, and frequently in adjoining fields as well; the nest-cavity is lined with fragments of broken shells, or small pebbles, sometimes both, or the nest-cavity may not be lined, but is scooped out in a tuft of grass, or other herbage, which partially or completely conceals the eggs.

RINGED PLOVER. CLASS 11.

April 29th 1901. Hants. Nest in a field of sprouting wheat 500 yards at least from the sea shore.
The nest-cavity lined with fragments of shells, and small stones, these must have been fetched from the distant shore.
The eggs four and in normal position.

RINGED PLOVER. CLASS 11.



May 31st 1905. Sussex. Nest on sea shore. Here there has been an attempt only, to line the (in the case) very shallow nest cavity, with small stones, and fragments of shells placed mostly on one side, very few resting under the eggs themselves, in fact it looks as if the stones and shell fragments had been spilled on one segment only. This I will refer to later on when treating of the Little Tern.

It might be inferred that the Ringed Plover only lines its nest when placed in fields, or some distances from the sea, but this is not the case, for even on the sea shore carefully lined nests are found, the lining consisting of broken shells or small stones. On the other hand are unlined open nests ever found in fields, or at any distance from the sea? I think not.

RINGED PLOVER. CLASS 11.

June 29th 1903. Sussex. Nest-cavity is unlined, but the hollow itself is scooped in sand on the sea shore in the midst of a tuft of grass with, a pink flower (not shown) growing over it; the eggs two in number as incubation had not started. Although the cavity was unlined, I prefer placing this nest in Class 11 instead of Class 1, as the bird had chosen a tuft of grass for its nesting site, instead of in the open as is usual.

Mr. Thomas Hepburn in the Zoologist 1904, page 172; under Birds of North Kent states that he kept a record of 19 nests of the Ringed Plover, and there were two in abnormal positions, "one of these was a scratch out hole, in the earth at the base of a river wall, and was separated by about 100 yards of salt marsh from the beach" (I have very frequently found nests much further from the sea) "the nest hollow being quite thickly lined with the leaves of the sea heath growing on the saltings." (I will refer to this building with vegetable material later on under Class III). "The other was scratched out by the side of a road made up of cinders and household refuse, running across one of the Saltings, this also was some distance, 200 yards from the beach, and the nest hollow was paved entirely with small pieces of earthenware, evidently picked off the track, on which the nest was situated. The remaining 17 nests were all on beaches within a few feet of high water; but 5 of them were made under the shelter of little bushes of sea heath, which grows on the beach, in small clumps, to the height of about 12 inches, the nest hollow being so much under the edge of the bush as to be partially concealed and shaded by its stems." Commenting on these statements made by Mr. Hepburn I may say that on at least 4 or 5 occasions, I have found nests placed in the centre of tufts of grass and completely shaded by the growth. Mr. Hepburn proceeds to say that the remaining 12 nests were in open exposed parts of the beach; of the 17 nests he noticed 7 were distinctly and without doubt

paved with small pieces of broken shells, the nests being bare hollows, scratched in the sand. He further goes on to state, that the normal nest would appear to be, a bare hollow scratched out in the most exposed portion of the beach. He puts the question whether both these lined and partially concealed nests, point to a gradual alteration in the habits of these birds in the direction of a more specialised nest.

The Zoologist 1903, page 192, had before his article appeared, published my notes on the subject, so I conclude Mr. Hepburn had not read them.

Again in the Zoologist 1902, page 374; Mr. Hepburn describes finding a nest in sand hills not far from the sea, containing three eggs a cockle shell 1½ inches in diameter; apparently taking the place of the fourth egg. The circumstance of a stone, far too large to be used in lining the nest cavity, but occupying a considerable space in it, I will allude to further on when describing nests of the Lapwing.

RINGED PLOVER. CLASS III.

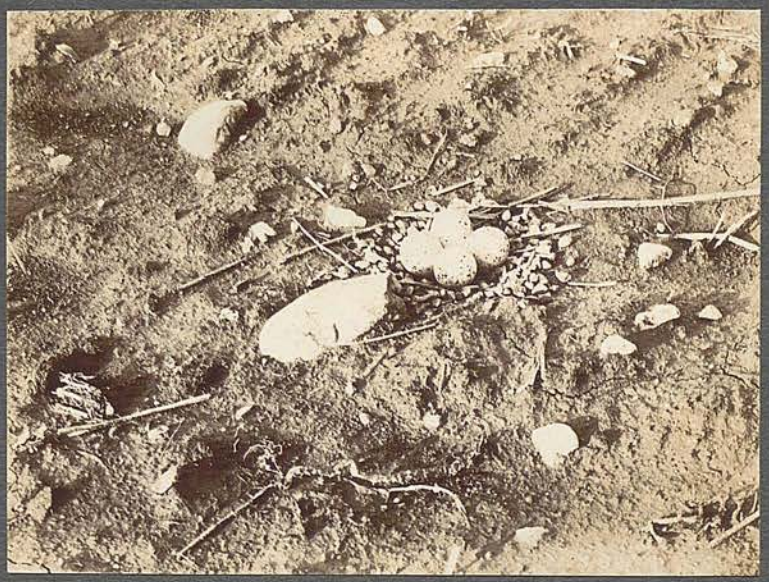
To my mind the most interesting of all, and a distinct advance on Class 1 and 2.

Nests, under this class occur in fields where the eggs are laid on small stones, with a few twigs placed on the latter. There are also some more twigs scattered about in the immediate neighbourhood of the nest.

This to my mind suggests the commencement of building with vegetable material.

On May 20th, 1902; Hants, I found a nest of this description in a field of peas, about 100 yards from the sea; the growth arched over and completely hid the eggs, therefore in this case, there was not only the commencement of building with vegetable matter, but also the nest site was unusual and a distinct advance on the open and exposed one usually adopted.

RINGED PLOVER. CLASS III.



July 4th 1901. Nest on a bare space in a mangold field about 200 yards from the sea. It consisted of little pebbles and a few sticks laid on them; some twigs were also scattered about around the nest; the eggs four, in normal position.

RINGED PLOVER. CLASS IV? BUILT NESTS.

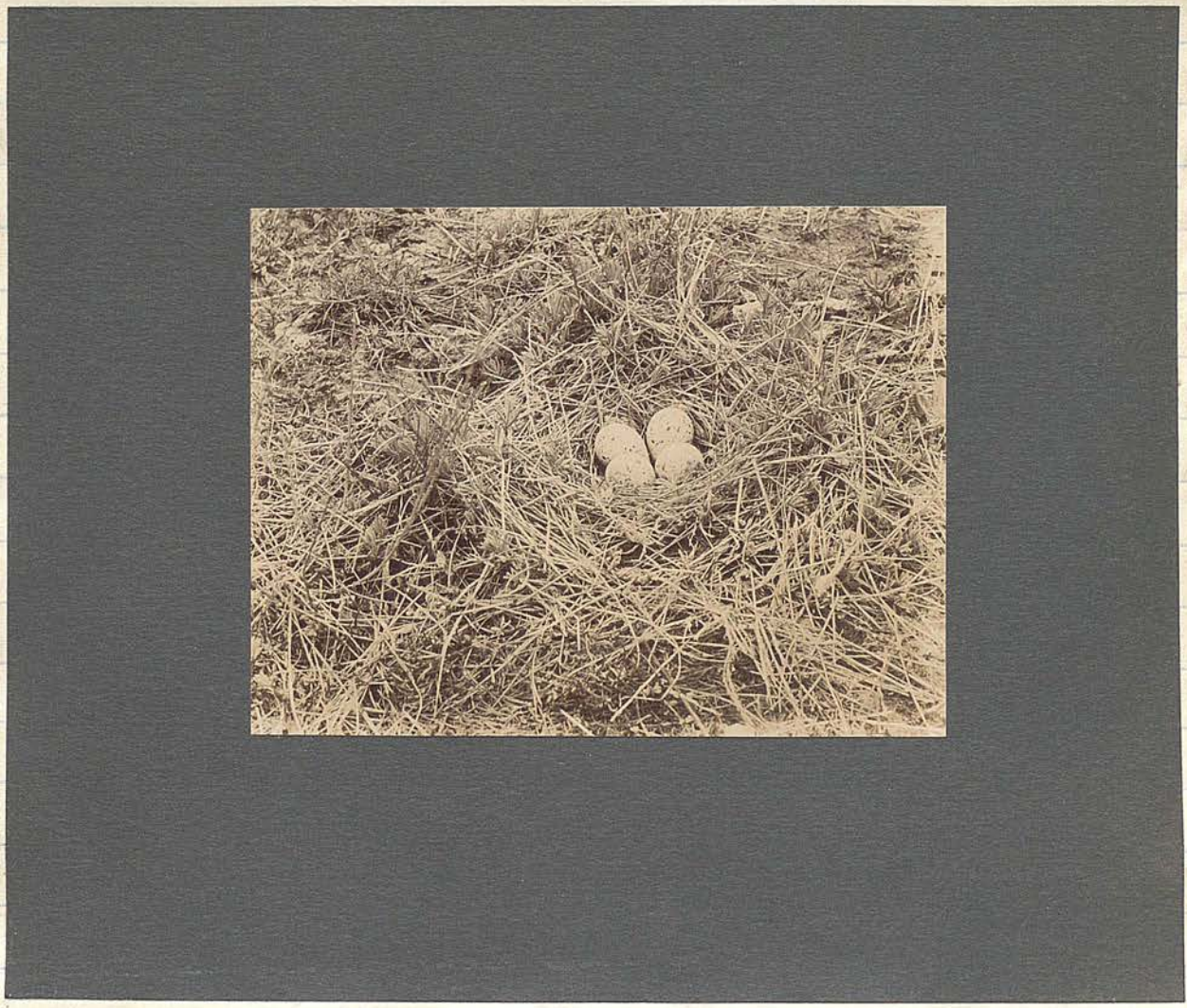
I have (as before stated) only found two of these, but I consider them very instructive, for here the manner of building is a very distinct advance on Classes 1, 2 and 3 which are rudimentary in the extreme.

These built nests appear to have interested several Naturalists, judging from letters received concerning them, therefore I take the liberty of describing them minutely.

On May 26th, 1900, Hants, I found in a ploughed field a rude nest constructed of bents, resembling that of a Lapwing only smaller in diameter, but quite as deep if not deeper than is usual with that bird; this contained three eggs of the Ringed Plover. The ground on which the nest lay was about to be harrowed, and as I had not my camera I took the eggs; but on June 8th a similar nest was constructed (evidently by the same pair of birds) a short distance from where the first had been placed; but this one was in a patch of coarse grass; and contained one egg. June 14th there were four eggs, and incubation was proceeding; I am pleased to state that the progressive pair of Ringed Plovers this time succeeded in hatching their clutch. Mr. Hepburn as before stated describes a nest lined with vegetable material, and Colonel Fielder one lined with the leaves and stems of atriplex littoralis, these however could be by no means described as built nests, for in each case the nest cavity was merely lined with the vegetable material, and

no pains had been taken to weave, and interlace it into the shape of a nest. I therefore conclude that the print shewn below is unique and it shews a wonderful and very marked advancement in nest building.

Built nest of Ringed Plover. June 14th 1900. Hants.



THE LITTLE TERN. (STERNA MINUTA).

This species also shows some advancement in Nest Building, but not nearly in such a marked degree as the Ringed Plover.

The normal nest appears to contain two or three eggs, laid on bare shingle or soil, sometimes without a nest cavity. According to Mr. Hepburn (Zoologist 1902, page 64) "they seem to choose places where the shingle is small and comparatively fine, and then do not even trouble to make the usual slight scratch out, laying their eggs in a chance depression such as a footstep."

Again the eggs may be laid amongst large pebbles lying in a depression caused by the shape of the stones.

In the Zoologist 1904, page 175, under Birds of North Kent Mr. Hepburn describes some Little Tern's nests as follows:- "a curious feature about some of these nest hollows made by the Little Tern on the beach is that they are most carefully lined with pieces of white cockle shell."

Mr. Hepburn has never noticed either on Dungeness Beach or any other district where he has examined Little Tern's nests the slightest approach to a lining of any sort, and it is only exceptional he thinks even on the beach under consideration.

"A typical nest of this description has the shells spread in a circular patch somewhat larger than the actual hollow in which the eggs are laid, and heaped up round the edge of the nest, so as almost to form a little circular bank.

The measurement of such a nest found on May 26th 1902 proved the hollow to be ¾" of an inch deep, and 4 inches in diameter. Late in the season he found four nests which were only partially lined with broken shells, giving the idea that the shells had been spilled as it were on one segment of the nest hollow, and on the same date, he found several nests with no shell lining at all.

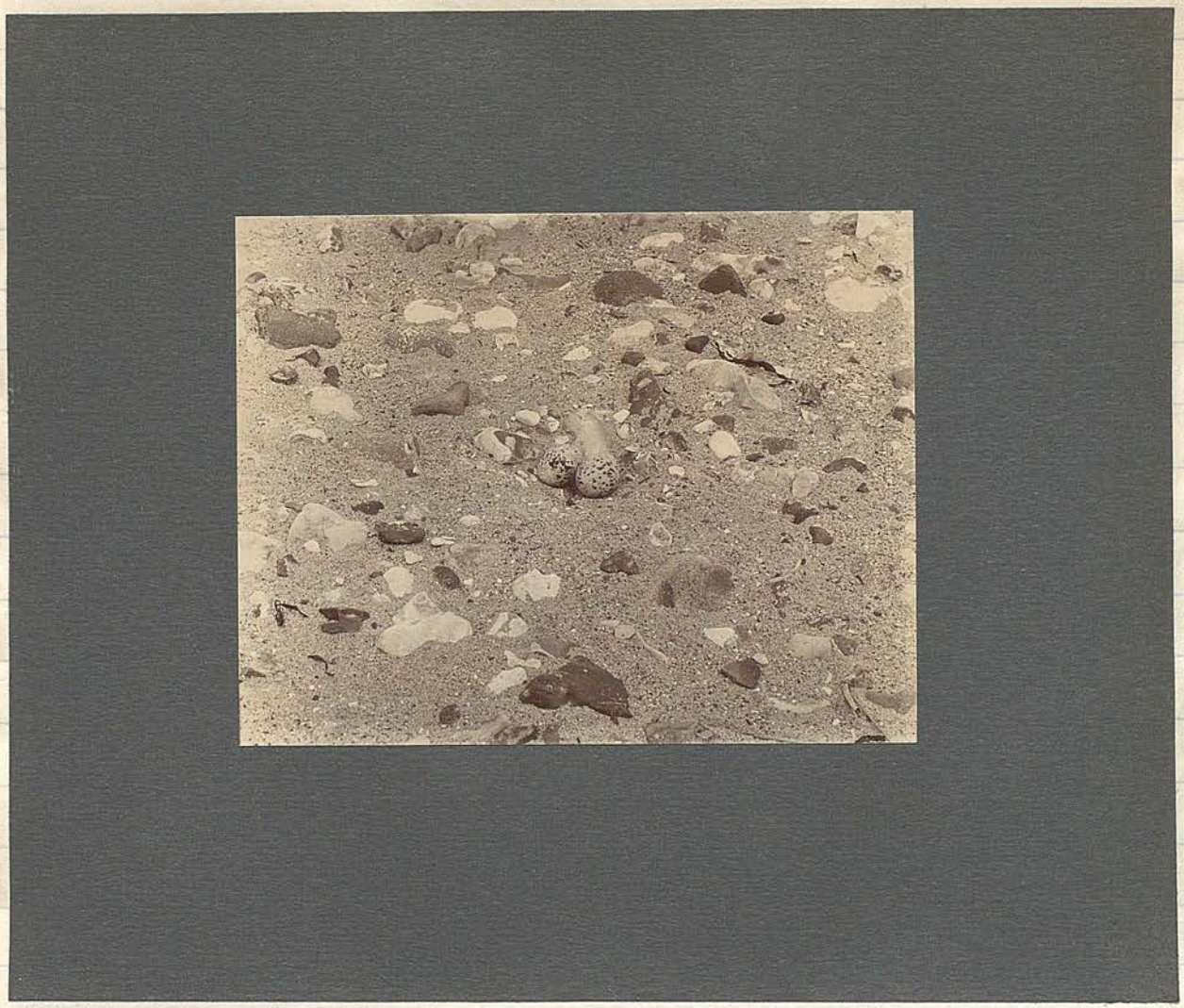
Mr. Hepburn's notes on the partially lined nests are particularly interesting where he describes the broken shells as if they had been spilled on one segment only of the nest; this suggests to me that the bird was hardly aware of what it was doing, and that we have here the first and most rudimentary attempt at nest lining. I referred to this when dealing with the Ringed Plover.

It would be interesting, but of course quite impossible, to ascertain if certain individuals of the Ringed Plover and Little Tern, always line their nests, while others abstained from the practice. It would thus appear that the Little Tern builds three classes of nests.

LITTLE TERN. CLASS 1. PRIMITIVE NESTS.

The eggs laid on bare soil, shingle, or large pebbles, without any attempt to line the nest cavity.

LITTLE TERN. CLASS 1.



June 10th 1904. Sussex. Nest a little depression in the sand of a stony beach, no attempt at nest lining. Eggs two. The tapering ends pointing in the same direction, one egg was heavily marked and zoned at the broader end with blackish brown.

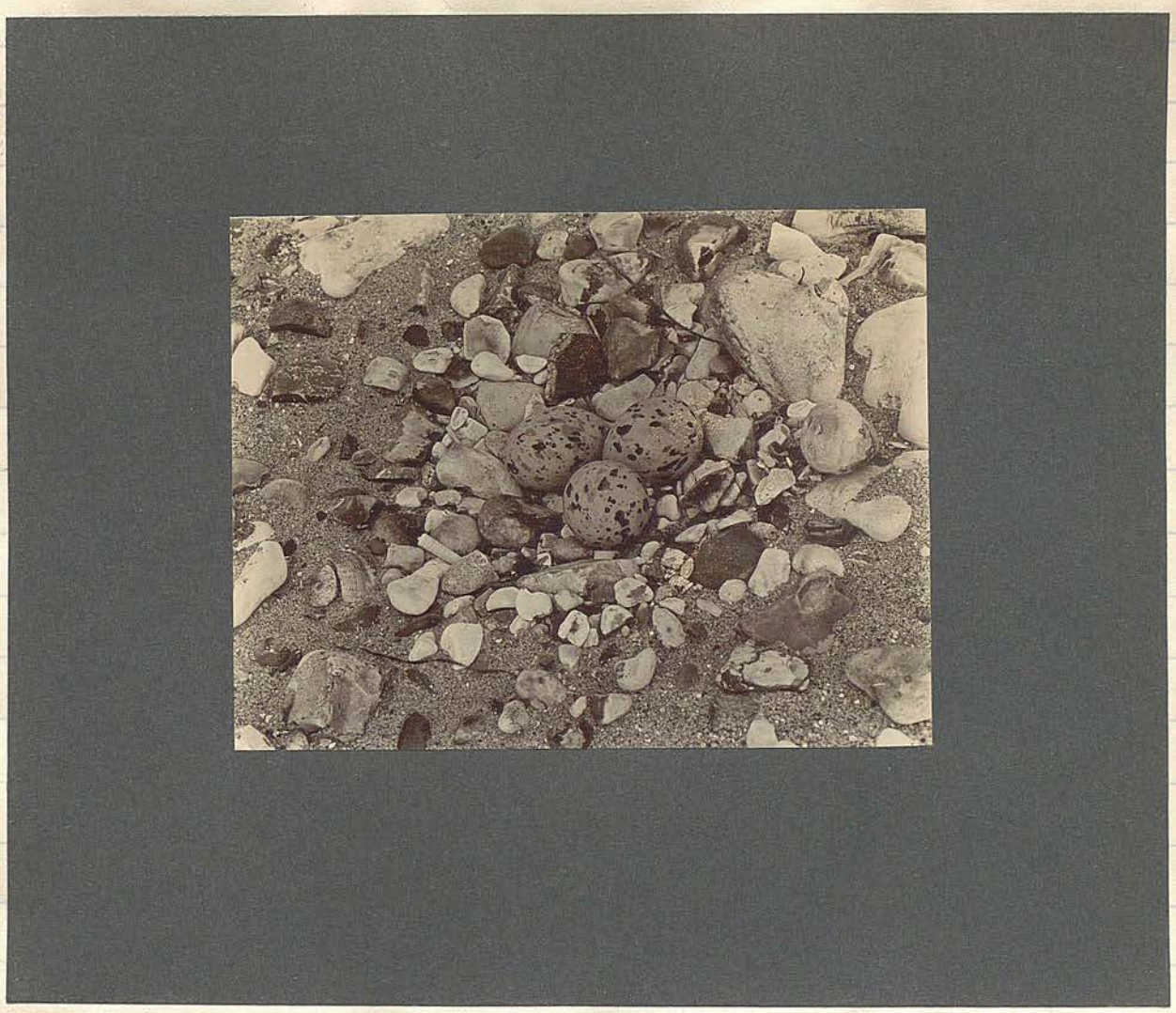
LITTLE TERN. CLASS II.

In which there is more or less attempt to line the nest cavity with broken shell or small stones.

LITTLE TERN. CLASS II.

June 23rd 1904. Sussex. Nest a little depression in the sand, a very slight attempt had been made to line the nest cavity.with a few fragments of shells.

LITTLE TERN. CLASS II.



May 31st 1905. Sussex. Nest on the sand of a stony beach, cavity lined with pebbles, 3 eggs; two lie with pointed ends inwards, and downwards, the third points sideways.

LITTLE TERN. CLASS III.

This - when the nest cavity is lined with a blade or two of grass; such nests have been described but I have never found one.

The common tern (Sterna Fluviatilis) appears to be more advanced in regard to nest building than its smaller relative. Certainly with the former, the eggs may be sometimes laid on sand, shingle, or dry seaweed, without any semblance of a nest; but I have more commonly found them on grassy Islands, a tuft of grass being chosen as a site and rudely beaten down and rounded to form a nest; or if situated on rocks rude nests are made of twigs, grass, etc.

THE LAPWING (VANELLUS VULGARIS).

This bird also exhibits some developement in nest building, and has three classes of nests.

The normal nest site appears to be a depression in turf, fallow land, rushes, dried mud, or shingle, open above; the nest composed of a few bents, placed crossways. The eggs four in number, their tapering ends placed inwards and a little downwards.

LAPWING. CLASS I. PRIMITIVE NESTS.

In the Zoologist 1902, page 63, Mr. Hepburn describes a nest with three eggs; these were laid on shingle and no attempt had been made to line the nest cavity.

Again at a meeting of the British Ornithologists Union, a member showed a slide of a Lapwing's nest on shingle, depicting the four eggs laid in a little unlined cavity. I am sorry I have never succeeded in finding one of the primitive nests.

These primitive nests are rare in the case of the Lapwing, although common in that of the Ringed Plover and Terns, a circumstance which points to the fact that the former bird has progressed further in the art of building.

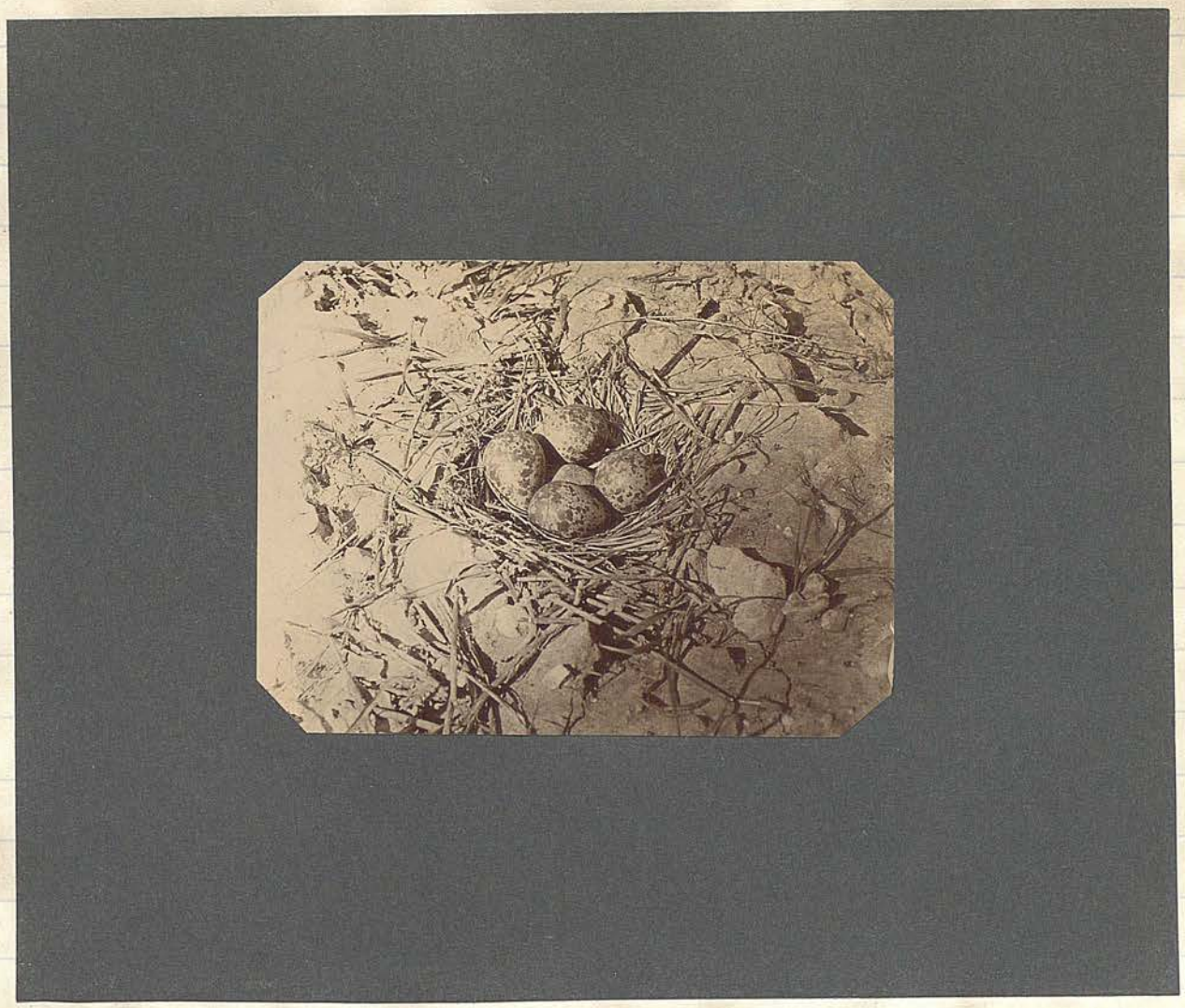
LAPWING. CLASS II.

The nest situated as before mentioned on fallow land, dried mud, shingle, rushes, grass, etc, but the nest cavity is lined with a few bents placed crossways.

LAPWING. CLASS II.

April 12th 1900. Hants. The nest on a stony field the cavity lined with bents, the four eggs in normal position.

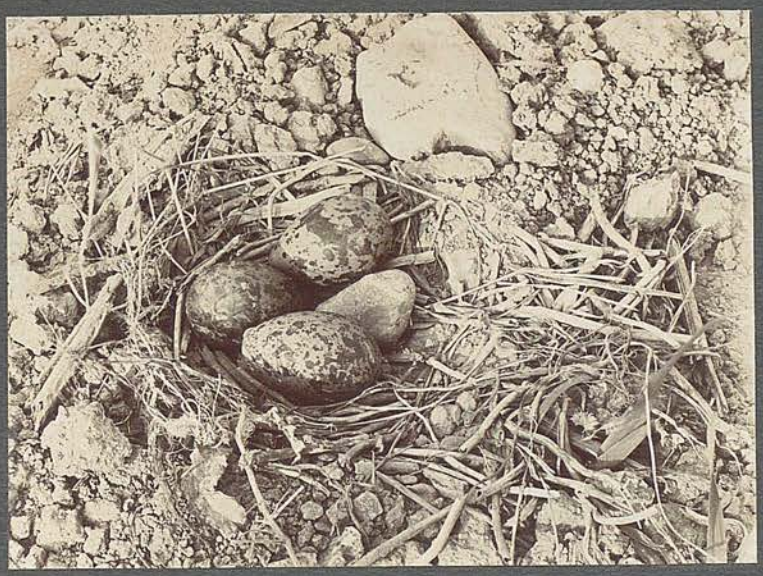
LAPWING. CLASS II.



April 23rd 1901. Hants. The nest on a stony field. The cavity lined with bents. I described these nests in the Zoologist 1905, page 108, as follows:- On a few occasions I have found a Lapwing's nest which contained a stone in the centre, the four eggs lying around but not in their normal position, viz. pointed ends inwards and downwards; but sideways, the pointed end of one to the broad end of the next.

A stone sometimes occupies a place among the eggs in the sand-scooped nest of the Ringed Plover, but I have never read of this in reference to the Lapwings, although it is well known to some farmers. On these occasions the nest is always placed on a stony field. The possibility of tricks by mischievous boys placing stones amongst the eggs cannot be urged, at any rate when nests are on well protected land, and carefully watched.

LAPWING. CLASS II.



April 28th 1905. Hants. This nest was on a bare spot in sprouting wheat, the nest cavity lined with bents and contained one egg.

April 29th two eggs, May 1st three eggs and one stone. The stone was only discovered on May 1st, along with the third egg, and therefore could not have been included during the process of nest building, as I formerly thought happened in these cases.

This stone occupied a space which would have been filled by the fourth egg if one had been laid. There was under the apex of one of the eggs another, but very small stone, which gives the egg in the photograph, the appearance of being bluff pointed.

Only one of these three eggs occupied a normal position.

LAPWING. CLASS II.

April 26th 1900. Hants. This is what I consider to be a typical nest made in grass composed of bents, the four eggs all in a normal position.

LAPWING. CLASS III.

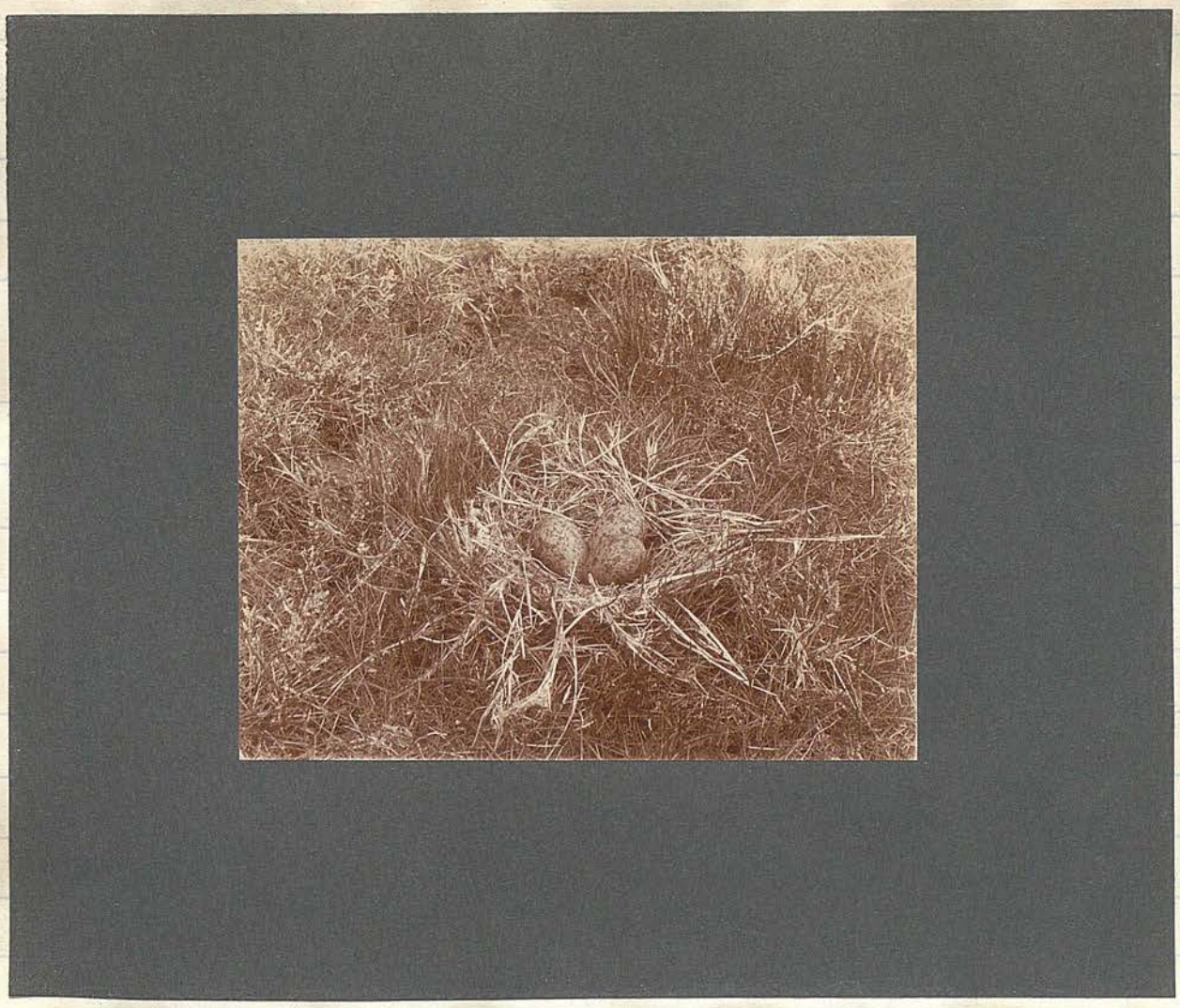
This is an advancement on classes 1 and 2. Under Class III, the nests are either not in open, exposed places, or ~~are~~ they are more elaborately built than in Class 2.

LAPWING. CLASS III.

May 27th 1902. Hants. A Lapwing's nest in a field of peas, completely concealed by the crop. The eggs (four in number) had been laid, not when the field was bare, but

after the peas had grown some height and formed quite an arch over the nest. This I have never seen before. The hen began to sit, and on the first and subsequent occasions when I approached flew direct from the eggs without any preliminary run, the thick growth around evidently preventing her seeing me till quite close.

LAPWING. CLASS III.



May 5th 1902. - Hants. Extract from Zoologist 1905, page 108. "One day when photographing Red shank's eggs I came across a very unusual Lapwing's nest, containing three eggs, placed on a slight eminence, two or three inches high, situated in very marshy ground; the water reaching up to our ankles for several yards around. This nest was a well built structure of dry grass, with quite a high foundation on the little mound; from its side extended at

intervals, several stalks of grass reaching to the ground, plaited with care, and evidently acting as supports to the edge, so as to keep the eggs dry. A friend Mr.John Stares M.B.O.U. (who was with me) remarked that when in Spain he was struck by the fact that in dry places the Black Winged Stilt made a rude apology for a nest, but in damp situations built a much more solid and elaborate structure.

The dried grass composing the Lapwing's nest described above by me, contrasted strongly in colour with the bright green grass growing around. Therefore although the nest was a great advancement in the art of nest building on the usual production, it was no advancement in protective resemblance to its surroundings.

Some years ago, in the transactions of the North Staffordshire Field Club, two somewhat similar nests were reported - ten inches high composed of dry stems of water plants, none thicker than a goose quill; but it was not mentioned if they were placed in wet ground." To this there was a reply (Zoologist 1905 page 145) by Mr. John P.P.Masefield" referring to Mr. Kelso's notes on the nesting of the Lapwing, ante page 108 I have turned up his reference in the transactions of the North Staffordshire Field Club, which is to be found in the Volume for 1898 page 48.

Mr. A. H. Read supplied me with notes describing the two Lapwing's nests in question, which were raised quite 10 inches high. No doubt (as Mr.Read said) the birds were guarding against inundation of the nest, if the

water in the reservoir rose higher. The ground was not particularly wet, but subject to inundations after showers. The reservoir is one of the Water Company's Store Reservoirs."

Now I think nests under Class III and especially the last two types described, show a distinct advance in building beyond the usual type, as well as greater intelligence on the part of the bird.

The Mistle Thrush. (Turdus Viscivorus).

The Song Thrush. (Turdus Musicus).

The Blackbird. (Turdus Merula).

It is very interesting to compare the nests of these three species, and note the bearing they have upon development. 1st. The Mistle Thrush's nest is composed of a good foundation of mud. Externally it is composed of twigs or bents. Which have a thick lining of fine grass. 2nd. The Blackbird's nest is made roughly speaking in three stages, 1st a foundation stage of roots, twigs, coarse grass, moss, etc. 2nd. a plastering of mud forming a cup when dry like that of the Song Thrush. 3rd. a lining of fine grass. 3rd. The Song Thrush's nest consists first of a foundation of dry grass stems, moss, twigs, etc., loosely put together. Next of cow dung a thick coat of which is laid on and worked well into the grass and when this is still moist and soft a thin coat of moist decayed wood

is added and the two worked together, then rounded off like a smooth cup inside; the nest is now allowed to dry.

In comparing the nests of these three different species I must recapitulate to some extent their description.

Mr. Selous in his book Bird Watching writes as follows in reference to the Blackbird and Thrush. "Roughly speaking there are three stages in the building of the Blackbird's nest. The first or foundation stage consists of moss, sticks, and leaves, the second stage is the mud stage; and the third, that of dry grass and fibre with which the interior is finally lined. The nest of the blackbird differs, in this respect, from that of the thrush. The latter bird, as is well known, lays its eggs in a smooth plastered cup formed not of mud, as one would think, but of rotten wood and cow dung. The blackbird after having collected all the moss and leaves that it deems necessary and made therewith the mass and bulk of the nest, resorts to some little ditch or sluggish stream and trowels up from its margin mud indeed, but not mud alone, for there is amidst it-generally if not always-a certain proportion of the fibrous roots or rootlets of mud loving aquatic plants. Of these the bird can take a firm hold with its bill, and as the mud adheres to the fibrous network, it is enabled to carry a considerable quantity of it at a time, though a greater or less amount often falls off during the passage." It is in this circumstance as he believes that one can read the origin of the extraordinary habit as Darwin calls

it, of a bird plastering the inside of its nest with mud. It is the thrush to which he alludes, but the description applies equally, and in respect of the material employed, still more accurately to the blackbird.

At a certain point in its construction, the nest of the latter would be mistaken by anyone without previous experience, for that of a thrush, the cup being as deep and perfect in form and the workmanship not noticeably inferior. It is however of a darker colour - black or approaching to black - though this may vary, according to locality. Over the whole surface are seen the scorings of the bird's beak, which seems to have been used as a trowel. But now, if the nest had been examined a day or two before, its interior, and especially the bottom of it, would have been found to be composed of a dank moist mass of vegetation, largely consisting of small water-plants, both the green part and the roots, to the many fibres of which latter a quantity of mud was adhering. Here then, we read the whole story. Fibrous material was needed on general principles by the female blackbird, and she found it in the spreading network of rootlets, belonging to water-loving plants that grew in little rills and ditches, near about her bosky brakes. But to this, mud clung, and, in consequence, there came to be a good deal of the latter in the cup of the nest. Something must be done with it. She began to daub and press it, and as she became gradually more and more a plasterer ~~and~~ mud seemed more and more the proper sort of

material to use, till at last, she sought it for itself alone, utilising the fibres which bound it together, and which had, at first, been what, alone, she sought, as a means of conveying it. But when the mud, thus brought, had been thoroughly smoothed and plastered, so that the nest seemed perfect and a thing complete, like the thrushes, there would still be something more to be done, for she - our hen blackbird- had always been accustomed to work in stages, and the final or grass thatching stage had not yet been entered upon. Therefore, she would cover up and entirely conceal all her fine plaster work, so that no one, seeing the finished nest, would imagine that it existed in any part of it. But will she always do this?" He cannot think so for she is a bird of sprightly intelligence and he believes, that like the thrush, she will some day find out that the neatly-plastered cup of mud does quite well enough to lay her eggs in, and that the further labour of thatching it with grass can be very well dispensed with. Any saving of time or labour must be of advantage to a species in the struggle for existence, and those birds who thatched their nests more thinly would be enabled to lay their eggs sooner, and thus rear more offspring. The last stage of lining the cup with grass may finally cease. It has ceased with the thrush, but, with the thrush, there has been a still further process of change for it no longer plasters its nest with mud, but with decaying wood and cow dung. Assuming the Ancestors of the bird to have once used mud, and lined the interior, as does the blackbird, there does not seem to be

any great difficulty in explaining this change. For probably much nearer to the blackbirds' nests than a muddy stream, were some decayed trees, whilst over the field which adjoined, cows or oxen sometimes grazed. Here again a change in the working material might prove of advantage, and when once a blackbird had become a plasterer, intelligence, and also haste, might lead it to use whatever came first to hand. After watching blackbirds building and examining their nests in various stages of construction, Mr.Selous thinks it much more likely that the thrush has passed through and then discarded a final stage of thatching the nest, than that it has stopped short at the stage of plastering, and not yet got to the one of thatching or lining. Numberless birds including other members of this family, line their nests with grass or other soft materials whereas plastering is a comparatively rare habit.

It is legitimate to assume that that which is common has preceded that which is rare. Whilst in works of ornithology reference is always made to the strange habit which the thrush has of daubing its nest, nothing, as a rule, is said in regard to the similar habit of the blackbird or, if anything is, we are told merely that mud is used to bind the materials together, and did the Blackbird not line its nest with grass after it had so carefully plastered it with mud brought from the water side, it would be as noted in this respect as is the thrush its near relative."

These observations of Mr.Selous are well worth

considering.

I have frequently examined nests of the three species, Mistle thrush, Blackbird, and Song thrush, and assuming Mr. Selous to be right in his deductions, I consider the Mistle thrush's nest the most primitive of the three, for the inner lining of grass cannot be removed without injuring the rest of the structure. Here the mud is certainly only used as a binding material.

The Blackbird's nest is a considerable advance on that of the Mistle thrush, for it has the beautifully smooth and shapely cup of mud of the Song thrush but so lightly lined with grass that the lining can be easily removed with the first finger and thumb leaving the cup and rest of the nest intact; and according to Mr. Selous the Song thrush's nest is a still further advancement in nest building. Closely connected with the subject of development in nest building, is the fact that birds occasionally make use of what would be considered quite abnormal materials in the construction of their nests, when these are close at hand and in sufficient quantity.

I have noticed this on a 400 acre farm called Eastoke in the neighbourhood of Portsmouth. This place is nearly surrounded by the sea. On its shores and the side of its creeks is cast up vast quantities of grass like seaweed Zostera Marina, which soon becomes bleached a pure white by the sun, and is used for building purposes in the nests of several completely land birds, in conjunction with normal material.

I have many notes on the subject.

1st. Mistle Thrush Nest. Eastoke. April 30th 1900. Nest in the fork of a Willow. The nest has a goodly proportion of bleached Zostera Marina worked into its sides.

2nd. Mistle thrush's nest. April 18th 1901. Eastoke. This nest was in the same tree as the last, but in a higher fork; much bleached Zostera Marina in its composition also pieces of rag.

3rd. Mistle thrush's nest. April 18th 1902. Nest in the crown of a tree growing close to the one which contained No.1 and 2 this nest was largely built of Zostera Marina.

It was a curious circumstance, that although many thrushes and Blackbirds bred in the proximity, these latter never used the Zostera Marina.

On Eastoke Farm I have found this bleached sea weed entering into the composition of the nest of the following species:-

Common Bunting (Emberiza Miliaria)
Yellow Bunting (Emberiza Citrinella)
Linnet (Linota cannabina)

I affix a print showing the white Zostera Marina worked in with other material in a Linnet's nest.

Linnet's Nest. Partially composed of bleached Zostera Marina.

Birds altering their usual nesting sites.

I had a curious experience of the above on Eastoke Farm, on one portion of which there was a tract of waste land, covered in parts with gorse, grass, rushes, and in some places marshy, its extent was about 60 acres. On the grass, sky larks bred in scores, making the usual nests in little depressions among tufts of grass and quite in the open.

We had 12 nests under observation at one time; but that spring rooks proved very destructive on this land, and destroyed them all besides many others.

But on May 31st I found a lark's nest placed in a most unusual situation viz:- under a small gorse bush; evidently persecution by rooks had forced the larks to abandon the usual open site for a protected one.

Lark's Nest under a gorse bush.

It is quite conceivable that if this persecution went on for long, and over big areas, larks might eventually alter their present nesting sites for ones which were more protected and hidden.